

ABSTRACT

A sealing device for use between a gas turbine combustor transition duct aft frame and a turbine inlet having improved durability, reduced wear on the mating turbine vane, and reduced manufacturing costs, is disclosed. The sealing device has a circumferential length, an axial width, and a radial height and contains a plurality of channels extending axially along the seal inner surface for passing a controlled amount of cooling air to a turbine inlet. The sealing device is formed of abradable honeycomb having a plurality of honeycomb cells with the honeycomb cells oriented to ensure maximum control against cooling air leakage while also providing maximum flexibility during assembly. The sealing device is captured between the transition duct aft frame, bulkhead, and turbine vane platform, thereby allowing easy replacement of the seal without requiring major disassembly of the transition duct aft frame section.